



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,294	03/25/2005	Raimund Ratzi	RATZI ET AL. -2 PCT	9148
25889	7590	02/22/2010		
COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			EXAMINER ZHU, WEIPING	
			ART UNIT	PAPER NUMBER
			1793	
			MAIL DATE	DELIVERY MODE
			02/22/2010	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* RAIMUND RATZI, ALEXANDER BOUVIER,  
WALTER REGENFELDER, STEFAN HARTL, and PETER ORTH

---

Appeal 2009-002588  
Application 10/529,294  
Technology Center 1700

---

Decided: February 22, 1010

---

Before BRADLEY R. GARRIS, CHUNG K. PAK, and  
PETER F. KRATZ, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's  
decision rejecting claims 1-3. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM for the reasons expressed in the Answer and below.

Appellants claim a method of producing a molded body made of sintered steel from a mixture of iron powder and a master alloy powder containing nickel, boron, and iron, wherein the boron content of the powder mixture is between 0.03% and 0.2% by weight at a boron share of the master alloy powder of less than 10% by weight (claim 1).

Representative claim 1, the sole independent claim on appeal, reads as follows:

1. A method for producing a molded body made of sintered steel, with a sintering powder on the basis of iron being mixed with a master alloy powder containing nickel, boron and iron, and with the powder mixture being pressed into a formed body before the formed body is sintered under the conditions of a liquid-phase sintering with a volume share of liquid phase up to 15%, wherein the boron content of the powder mixture is between 0.03% and 0.2% by weight at a boron share of the master alloy powder of less than 10% by weight, that the weight ratio between the nickel and the boron share of the powder mixture exceeds 5 and that the master alloy powder has an average particle size of between 10 and 90  $\mu\text{m}$ .

The references set forth below are relied upon by the Examiner as evidence of obviousness:

Marshall

GB 975,322

Nov. 18, 1964

Takuhiko Nishida et al., *Effect of B on the Densification and the Mechanical Properties of Sintered Iron Powder Compacts*, in 54-10 J. Japan Inst. Metals 1147-1153(1990) (hereafter Nishida).<sup>1</sup>

The Examiner rejects all appealed claims under 35 U.S.C. § 103(a) as being unpatentable over Marshall in view of Nishida.

---

<sup>1</sup> In applying the Japanese reference to Nishida, the Examiner relies upon the English language disclosures in this reference such as the English language abstract and the English language captions for Nishida's Figures. We will likewise rely on the English language disclosures of this Japanese reference in assessing the merits of the rejection on appeal.

The Examiner finds that Marshall teaches a method for producing a sintered ferrous alloy from a powder mixture comprising the claim 1 ingredients at concentrations which overlap those of claim 1 (Ans. 3-4). The Examiner also finds that Marshall teaches adding nickel as a powdered alloy with one or two of the other metals present, and the Examiner equates this powdered alloy with the master alloy of claim 1 (*id.* at 3, last para.). Additionally, the Examiner finds that the other metals present in Marshall's nickel powdered alloy may include iron and boron in the form of ferro-boron or metallic borate (Ans. 5, last para.), thereby corresponding to the nickel, boron, and iron master alloy powder of claim 1.

The Examiner acknowledges that Marshall does not expressly teach a master alloy powder containing nickel, boron, and iron as required by claim 1 but finds that Nishida teaches using such a master alloy powder in making sintered iron powder compacts (Ans. 4). The Examiner concludes that it would have been obvious for one with ordinary skill in this art to use in the process of Marshall a master alloy powder containing nickel, boron, and iron in the manner and for the reasons taught by Nishida pursuant to the requirements of claim 1 (*id.*).

Appellants argue that Marshall contains no teaching or suggestion of a master alloy powder containing nickel, boron, and iron as required by claim 1 (App. Br. 7). Appellants acknowledge Marshall's disclosure of adding nickel as a powdered alloy with one or two of the other metals present but argue that boron would not be included in such a nickel powdered alloy because boron is not a metal (*id.*). However, this argument does not address the Examiner's above-noted finding, which is undisputed in the record before us, that Marshall discloses adding boron in a metallic form such as

ferro-boron or metallic borate. Under this circumstance, we perceive no convincing merit in Appellants' contention that "Marshall . . . discloses that nickel can be prealloyed with another metal but a prealloy of iron, nickel, and boron is excluded" (App. Br. para. bridging 7-8).

Appellants also argue that, in order to obtain desired mechanical properties of the sintered steel, Nishida requires a boron content of the powder mixture which is higher than the 0.2% maximum recited in appealed claim 1 (App. Br. para. bridging 8-9). Specifically, Appellants contend that Nishida requires adding 3 to 7 weight % prealloyed powder (i.e., master alloy powder) which results in 0.3 to 0.7 %, as opposed to the claim 1 maximum 0.2 %, boron content of the powder mixture (*id.* at last sentence; *see also id.* at para. bridging 9-10).

This argument is unpersuasive.

As correctly explained by the Examiner and contrary to Appellants' belief, Nishida does not require the proportion of master alloy powder to be at least 3 weight % (Ans. para. bridging 6-7). Rather, Nishida expressly discloses obtaining the mechanical property of maximum elongation at a 2 weight % addition of master alloy powder (*id.*; *see also* Nishida, abstract). According to Appellants' own calculations, the 2 weight % addition disclosed by Nishida would result in a 0.2 weight % boron content of the powder mixture which falls within the corresponding boron content ranges recited in claim 1 and disclosed in Marshall.

Appellants argue that, "[e]ven if Appellant's [sic] method were obvious, Appellant's [sic] method of making sintered steel to produce steel with good tensile strength while using a lower boron content to create strong impact strength creates surprising or unexpected results" (Reply Br. para.

bridging 3-4). However, Appellants acknowledge that they have submitted no evidence in the record of this appeal (Reply Br. 4; *see also* App. Br., Evidence Appendix & Reply Br., Evidence Appendix). Because no evidence has been proffered in support of Appellants' argument concerning unexpected results, this argument is unconvincing.

For the reasons set forth above and in the Answer, Appellants have failed to provide the appeal record with any argument or evidence which reveals error in the Examiner's § 103 rejection. We sustain, therefore, the § 103 rejection of claims 1-3 as being unpatentable over Marshall in view of Nishida.

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a) (2008).

AFFIRMED

ssl

COLLARD & ROE, P.C.  
1077 NORTHERN BOULEVARD  
ROSLYN, NY 11576